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TRAINING PACKAGE: FOREIGN MILITARY SALES (FMS) AGREEMENTS (PLAN--ETC(U)
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DEFENSE SYSTEMS MANAGEMENT COLLEGE

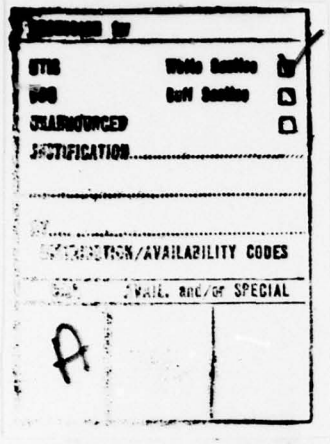
PROGRAM MANAGEMENT COURSE
INDIVIDUAL STUDY PROGRAM

TRAINING PACKAGE: FOREIGN MILITARY SALES (FMS) AGREEMENTS (Planning and Costing)

FORMAL
STUDY PROJECT REPORT
PMC 77-1

WILLIAM E. DAVIS
GS-13 DAC

FORT BELVOIR, VIRGINIA 22060



TRAINING PACKAGE: FOREIGN MILITARY SALES (FMS) AGREEMENTS

(Planning and Costing)

DEFENSE SYSTEMS MANAGEMENT COLLEGE

Program Management Course

Class 77-1

by

WILLIAM E. DAVIS
GS-13 DAC

May 1977

Study Project Advisiors
COL Bob Lucas, USAF - Mr. William H. Cullin

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DEFENSE SYSTEMS MANAGEMENT COLLEGE

STUDY TITLE: TRAINING PACKAGE: FOREIGN MILITARY SALES (FMS) AGREEMENTS (Planning and Costing)

STUDY PROJECT GOALS: To analyze Training and Doctrine Command (TRADOC) Curriculum Development Directives and DOD Directives related to Systems Acquisition. To show the similarities of the procedures and processes used in each, and to relate how more accurate training cost estimates are possible through thorough training requirement analysis.

STUDY REPORT ABSTRACT: The purpose of this study is to dramatize the appearance of a new dimension which is emerging on to the program management scene. Various directives and other documents which are published by different organizations within the government are analyzed and discussed in terms of their similarities. The central idea is to show the ease with which an individual who has experience in the systems acquisition process can reorient that experience to the development of a Foreign Military Sales (FMS) training program.

The study also identifies documents that are related to cost reporting which can be used in conjunction with the curriculum development directives to provide a valid basis for more accurate cost estimating where training costs must be included in a package type FMS case. The study takes advantage of experience gained in an on-going program in showing how pitfalls may be avoided where advanced planning must be accomplished and required funds, facilities, equipment, personnel, and other training related items projected.

A brief planning model is provided to weave a common thread through the entire process of developing a training package in the current FMS environment.

Sample forms which are useful in doing the training analysis, formulating the overall training plan, and organizing in a manner which makes the cost track easier to follow are also provided.

KEY WORDS: Foreign Military Sales: Estimating Training Costs.

NAME, RANK, SERVICE	CLASS	DATE
WILLIAM E. DAVIS, GS-13	PMC 77-1	MAY 1977

EXECUTIVE SUMMARY

The purpose of this study is to compare the acquisition procedures required for a Foreign Military Sales (FMS) Case training package with those required in hardware acquisition programs. This comparison will show the similarities between the two procedures very clearly.

In recent years FMS have increased tremendously (see Figure 1).[1] At the same time there has been a corresponding decrease in Military Assistance Programs (MAP).[11] In view of this shift, there is increased interest, involvement, and emphasis on FMS transactions within the Departments of State and Defense. Historically, the US Government has tried to avoid direct involvement in FMS on a government-to-government basis. However, documentation of transactions at the State Department level during the last 6 to 8 years revealed that foreign governments prefer buying on a government-to-government basis. This change in philosophy was never more clear than in the 1973 Memorandum of Understanding (MOU) signed by the US Government (USG) and the Kingdom (Government) of Saudi Arabia (SAG). The MOU involved not only hardware needed to begin modernization of the Saudi Arabian National Guard (SANG), but it carried a personnel training clause with it.

The USG had recommended to the SAG in the early 70's that it should deal directly with USG industry in fulfilling its modernization requirements. The SAG did just that and was unsatisfied with the results. Finally a compromise was reached.

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[1] - references indicated by these numbers are shown in the list on Bibliography of this study.

The compromise was to get the job done by US industry but to have the entire effort done under the USG control. While this agreement was made at the Department of State level, the expertise required to follow through was not readily available there. As a result the DOD, having the expertise, was asked to handle the program. The very nature of the SANG requirement led to assignment of the program to the Department of Army (DA). The signing of this Government-to Government MOU and the subsequent tasking of DA to implement it, gave birth to a new kind of Program Manager (PM). Acquisition as it had been known in the past would take on a new dimension.

The FMS mix in the SANG program has been under constant surveillance since 1973. To date, the program has met with an exceptionally high degree of success. This success has been attributed largely to the presence of a PM monitoring and interfacing with both the contractor and the SAG. The program and its success has not gone unnoticed by the governments of other developing nations. Consequently, it appears that the acquisition community must recognize this new dimension in Program Management and begin now to prepare personnel who may get involved in this type program to deal effectively with the challenge that could face them in the future.

The thrust of this report shall be to bring into focus the tremendous impact of a "personnel training clause" in programs similar in nature to the SANG effort. The importance of thorough analysis of the training requirement in an attempt to increase accuracy and validity of program schedules and cost estimates, both of which are very critical items in today's acquisition environment, have surfaced in the new type program, and must be dealt with.

Training can no longer be viewed as an aspect of the program where we can go to the user and acquire additional support if needed. In SANG like programs contractors are brought in to do the job. So training "cost estimates" must be as accurate and valid as estimates for any other aspect of the program if the customer is to get a total dollar estimate that he can have confidence in.

FOREIGN MILITARY TRAINING
CONUS ARMY SCHOOLS

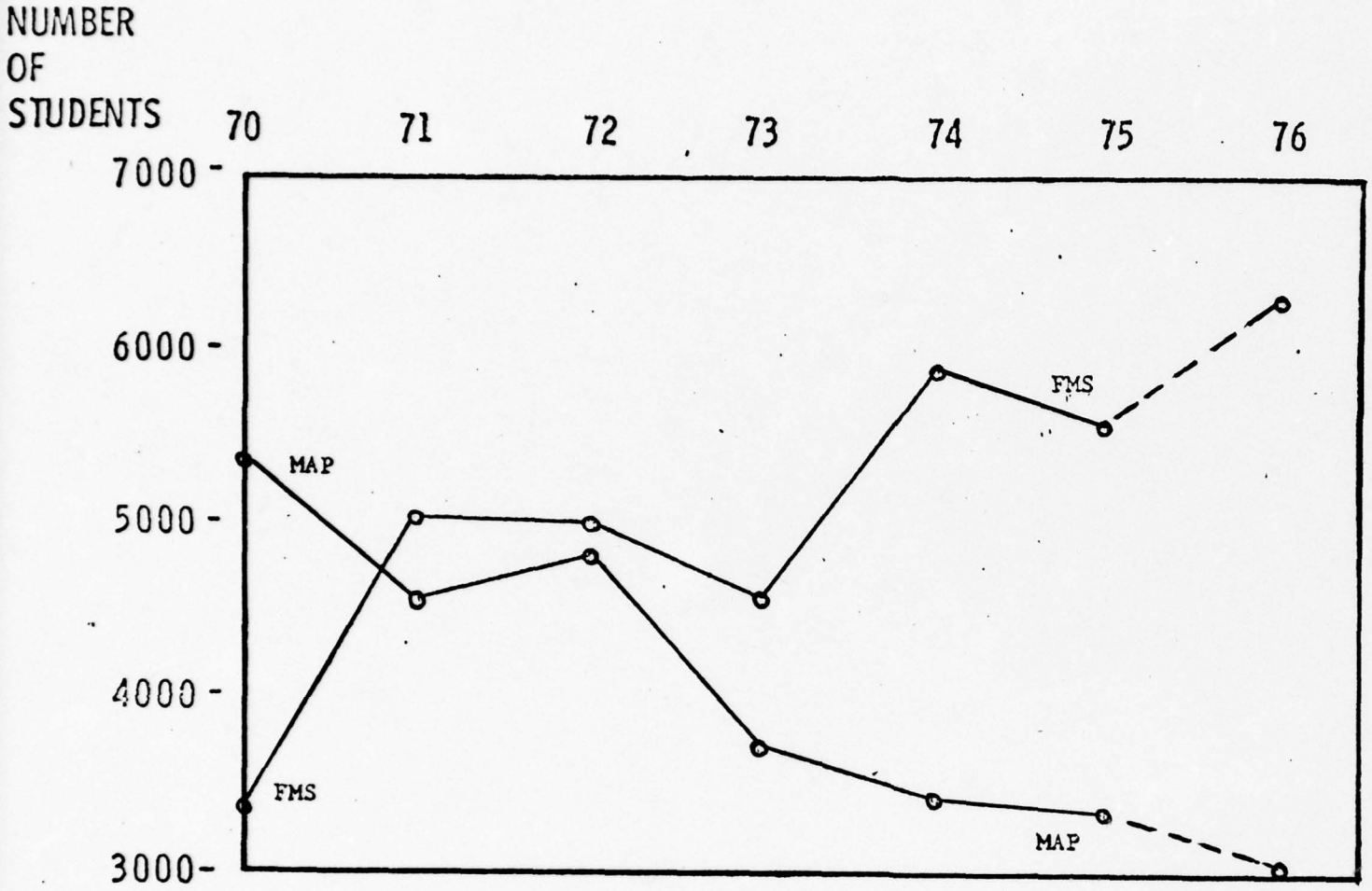

FIGURE 1

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CHAPTER I

INTRODUCTION

Purpose

The purpose of this study project is four fold. First, to briefly describe the initiation of the on-going Saudi Arabian National Guard (SANG) program. Command relationships for the program are shown at Figure 2. The PM's organization of his office is shown at Figure 3. Second, to briefly describe and compare the purposes and philosophies outlined in DODD 5000.1,[3] Major System Acquisitions, and TRADOC regulation 350-100-1 Systems engineering of Training.[4] Third, to bring the contents of these two documents together in a meaningful fashion to display their intrinsic similarities and show how training programs can be related to DA Pam 570-588, "Staffing Guide for US Army Service Schools,[5] and to appropriately adjusted requirements of the Development and Readiness Command (DARCOM) Pam 715-5, "Cost/Schedule Control Systems Criteria.[6] Pam 715-5 describes the Cost/Schedule Control System Criteria (C/SCSC) and provides an excellent basis for estimating the cost of specially tailored training programs. Cost estimating is very critical to the PM in any program but is much more difficult to get a handle on where training is a major portion of the estimate. And fourth, to outline a straight forward approach to planning a FMS training package which is to be contracted out for its accomplishment. It is emphasized here that the techniques described and recommended in this study are strictly the views of the author. There is no intent to critique or criticize the SANG program. Rather the intent is to suggest ways that a PM who may get involved in such programs can strengthen the training aspects of his contract.

SANG MODERNIZATION PROGRAM COMMAND RELATIONSHIPS USG AND SAG

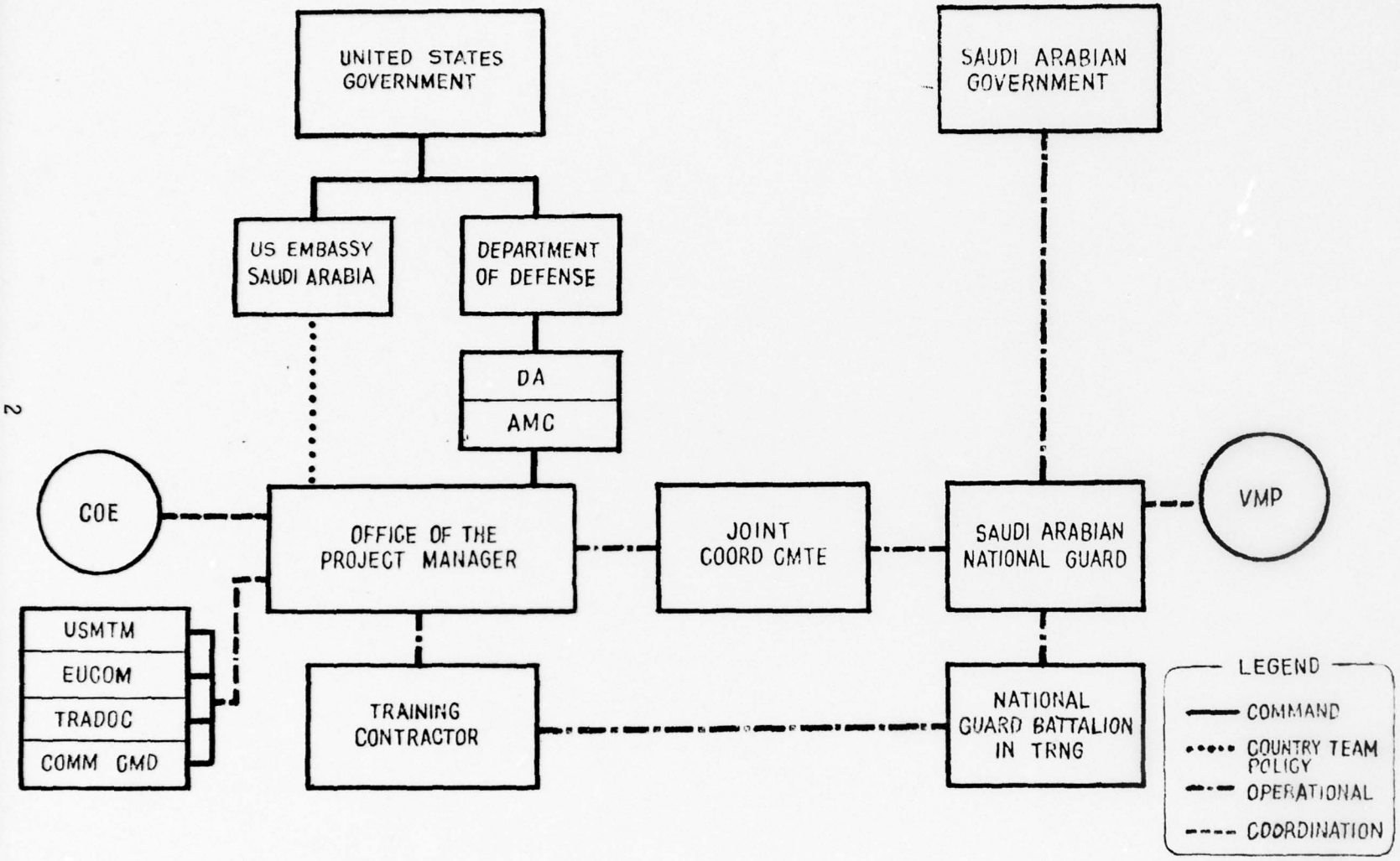


FIGURE 2

OFFICE OF THE PROJECT MANAGER
SAUDI ARABIAN NATIONAL GUARD MODERNIZATION PROGRAM
ORGANIZATION CHART

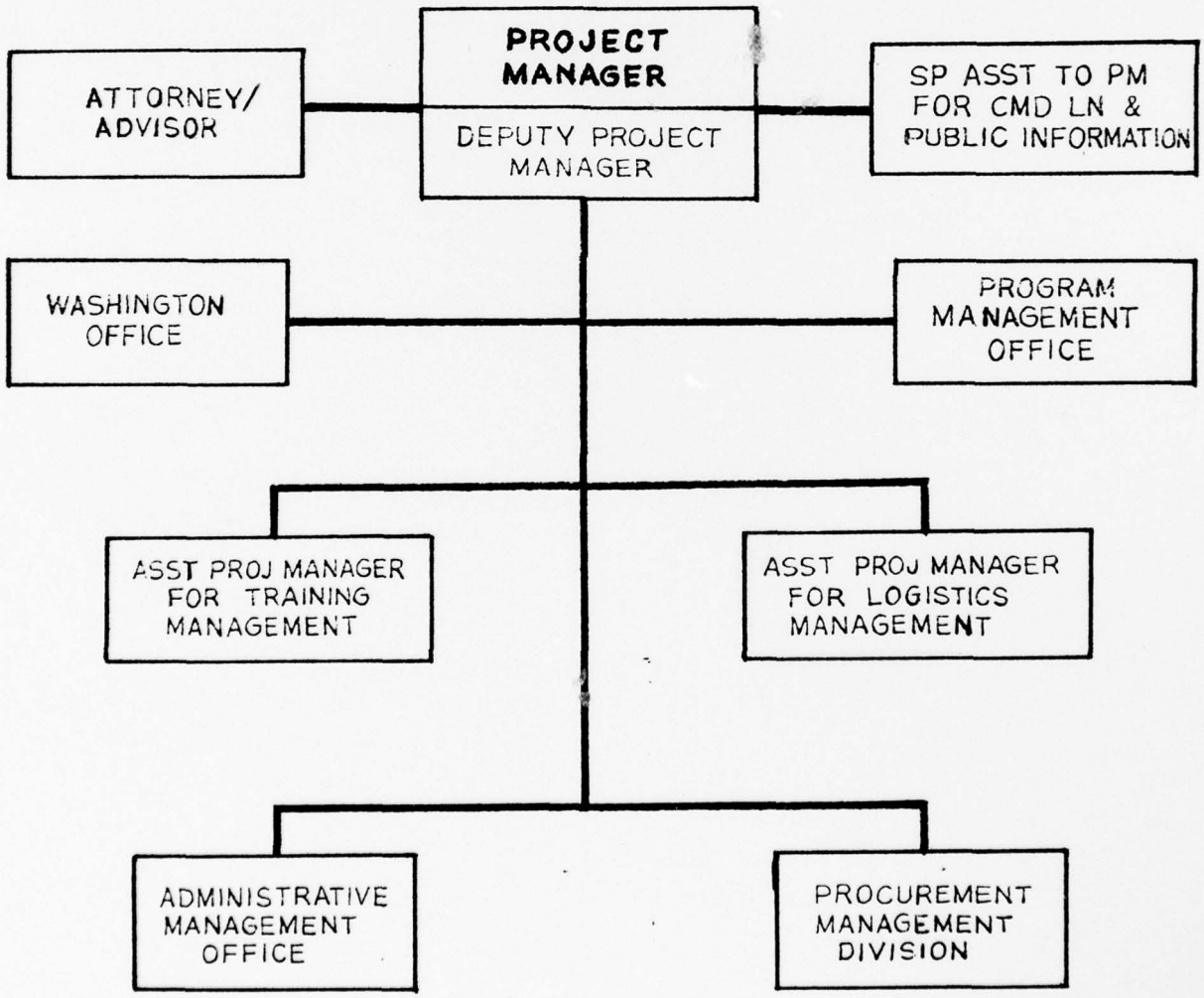


FIGURE 3

This is a simple effort to show how the thought processes that are applicable to the overall systems acquisition effort are equally applicable and effective when related to appropriate aspects of a curriculum development and training program.

Approach

The study effort centers primarily around the identification of existing DOD, DA, DARCOM, and TRADOC documents which separately may appear to have little value in a program such as the SANG. But taken together, when properly meshed, they have a major impact on this type of program. The pertinent aspects of each of these documents are analyzed to a level which permits a clear understanding of exactly how they relate to and support each other. This feature is very important in light of the fact that training has long been viewed as difficult, if not impossilbe, to fully control, from a cost estimating point of view, in a systems acquisition environment. Since cost estimates are difficult, inadequate emphasis is often placed on training requirements in the early planning stages of a program. Once these documents have been analyzed and explained, they are then synthesized into a meaningful single approach to effectively integrating vital training requirements to include personnel, aids, equipment, facilities, materials etc., appropriately in the early stages of the total master plan.

Limitations

The SANG program, around which this study is centered, is very broad and complex. This study however will be limited strictly to the planning and cost estimating aspects of the training program. Specifically addressed will be planning, initiation, and program outline in a manner which lends

itself to efficient and effective cost estimating, managing, scheduling etc.. The net result should be higher quality statements of work (SOW) in Requests for Proposal (RFP's) and added clarity in contractural documents for SANG like programs. Other aspects of the SANG program will be addressed only as they relate to a point being made about the training program.

Organization

The study is organized into chapters. Chapter 1 is the introduction. Chapter II is devoted to background information on the SANG program initiation and development. Chapter III goes into a moderately detailed analysis of the contents of TRADOC Regulation 350-100-1[4] with regard to training program curriculum development.

Chapter IV highlights specifics of the phases of the systems acquisition process and compares them with those curriculum development and training process reflected in the TRADOC Regulation 350-100-1. The TRADOC process is then compared to the C/SCSC and the service school "Staffing Guide" DA Pam 570-558 requirements to show how they can be effectively integrated to assure more adequate program planning from the standpoints of personnel, funds, and facility requirement.[5]

Chapter V provides conclusions and recommendations resulting from the study effort to include suggestions of possible ways of implementing the procedures described herein.

CHAPTER II

INITIAL APPROACH IN SANG PROGRAM

Team Survey

The signing of the 19 March 1973 MOU mentioned earlier and the designation of the DOD as program monitor eventually led to the designation of the DA as its Executive Agent for implementation of the SANG Modernization program. Consistent with this designation, the DA assigned the responsibility for general management and execution of the program to the Deputy Chief of Staff for Logistics. This assignment was made in the form of a letter, an excerpt of which is at Appendix A. This document gave the Deputy Chief of Staff for Logistics (DCS-L) the specific overall DA Staff responsibility and placed a high priority on what it called a politically important, urgent and complex program. The DCS-L further deligated this responsibility to the DARCOM.

Based upon the general guidelines provided in the 27 April, 1973 letter, the DARCOM (Army Materiel Command (AMC) then) pulled together a Technical Evaluation Team (TET) composed of 19 military personnel with skill and knowledge backgrounds similar to many of the skills believed to be required in all areas of the modernization program. This team was dispatched to Saudi Arabia in July of 1973. From 17 July to 23 August, 1973 the team gathered data related to the SANG organization, its equipment, its methods of operation and its approved on-going and projected programs. The team visited SANG headquarters and staff agencies, area commands, and storage, maintenance, transportation, and communication facilities. They

also visited the SANG training center and technical schools and operational battalions, both regular and irregular. The data collected by this team served as the basis for a master proposal to the SAG for the modernization of the SANG.[2]

Program Proposal to the Saudi Arabian Government (SAG)

The initial proposal addressed a two plus two (2 + 2) plan for establishing, training and equipping two mechanized infantry battalions and two artillery batteries. This proposal was presented to the SANG Commander, HRH Prince Abdullah on 13 December 1973. The proposal, which addressed the personnel, equipment, facilities and required funding, was unsatisfactory to the SANG Commander. His understanding of the MOU was that the proposal should support the modernization of four battalions. The proposal was revised to reflect the establishment of training and equipment for four battalions of mechanized infantry and one artillery battalion. This mix was agreed to on 8 April 1974 by the SANG Commander.[2]

It is significant to note at this point that cost estimates for the program had been based upon a draft Table of Organization and Equipment (TOE) which was structured to meet the specific needs of the SANG program agreed to on 8 April 1974. Estimating the cost of this program was fairly straight forward except in the area of training. This estimating difficulty is expressed clearly in the Project Manager's Master Plan (PMMP) as shown below.

> Training costs were most difficult to estimate since this effort represented a totally new approach by the USG in the training field, i.e., that of training a military force by using a commercial contractor.[2]

It is specifically this weakness in the overall program to which this study is oriented. It is the belief of the author that the processes and

procedures currently outlined in the separate documents mentioned earlier can be integrated in such a way that the cost estimate for training in a program of this nature are initially more valid. The five year program cost estimate was set near $335 million which has proven to be considerably less than that needed to do the program as it should be done. Methods of improving the cost estimates in this soft area of training are addressed in Chapter IV of this study.

Estimating the cost of equipment needed by each battalion, once deployed, was a rather straight forward process of looking at the TOE. Through a thorough analysis of the TOE, the different pieces of equipment were identified and their unit costs were determined. Summaries of these costs were then developed into sales cases for the appropriate quantities and to that was added the necessary overhead to establish a valid hardware cost estimate.

As for training personnel, training equipment and aids, training facilities and overhead needed to support the overall training program, a totally different approach is required. Many variables must be appropriately considered - the philosophy on class sizes for different types of instruction, the mix and total hours allotted to the hands-on vs. conference methods e.g.. These philosophies in turn drive the number of instructors, assistant instructors and interpreters required as well as the quantity of and type of facilities and overhead required in support of this mix. Details on how to get a handle on the above training variables are covered in Chapters III and IV.

Request For Proposal (RFP)

We come now to the point where a RFP must be published and put onto the street to get bids (proposals) from industry. The RFP is a critical item in any acquisition process for it provides the framework within which the prospective contractor will structure his return proposal. Any weaknesses reflected in the RFP will be reflected in the resulting proposals and subsequent contractural documents.

The RFP for this program was developed using the data previously collected by the TET and the draft TOE as the basis. The general approach to specification identification, was fairly satisfactory as far as it went however, it was incomplete. Training courses and estimated numbers of personnel attending each were identified. General descriptions, objectives and course lengths were outlined. This kind of information is normally good to provide the prospective contractor - if it is valid. In the case of the SANG however, the information only represented best estimates with required backup analysis having not been accomplished. The net result on the RFP was added cloudyness in that the prospective contractor used this, at face value, to form the basis of his proposal. As a result, proposals reflected soft cost and schedule estimates for the required training program.

Proposal

The RFP was put out to industry and even though it contained vagueness as to the actual training requirements, those potential contractors who responded did a fairly good job of outlining their curriculum development approaches. They had based their replys to this section of the RFP on the appropriate references which accompanied the RFP. Most proposals went to

great detail in explaining exactly how the training requirements would be determined and the techniques that would be used to satisfy these requirements. What finally resulted in the contract however, turned out to be quite different though. This was primarily the result of a weakness in the way the training section of the contract was written. The detail (specifications) that was outlined in the contractor's proposal was not carried forward to the contract that was signed. This, of course, became a very weak link in the contract.

Contract

We said earlier that problems reflected in the RFP will usually come back to haunt the program in later activities. This is exactly what happened in this case. After the signing of the contract, there was minimum emphasis placed on doing the things in training which had been given high priority in the proposal. This happened primarily because in writing the contract, the details of what was expected in the way of his performance were very vague. Attempts were made to prevent what could be seen early as a possible weak performance in the training area. Initial attempts, which involved a clarification of the requirement, failed to accomplish a complete reversal of the trends. So, the program was started in an environment where planning fell just a bit short of what had been expected. Much has been done since the signing of the initial contract to strengthen these weak areas. The present contractual activities attest to the effectiveness of corrective actions that have been taken.

The point to be made here is that care must be taken to assure that every key document concerning the requirements of a contract is clear in terms of what is expected. The RFP is the most critical of these documents.

If there is vagueness in the RFP, the vagueness will simply be compounded in related follow-on documents.

With this general description of the approach used in the first of a new type of acquisition process as a backdrop, let us now take a closer look at some of the documented procedures that are available that when understood and appropriately interfaced can be a giant step toward establishing a sound planning base and providing the framework within which accurate and valid cost estimates can be made in the training area of contracts similar to that for the SANG program.

CHAPTER III

ANALYSIS OF TRAINING AND DOCTRINE COMMAND (TRADOC) CURRICULUM DEVELOPMENT PROCEDURE[4]

Job Analysis

To adequately plan for and estimate the cost of any program, the planner must know exactly what he is planning for. He must determine which factors drive other factors so that appropriate arrangement of the various steps within his plan can be achieved. If one is to determine the cost of a program accurately, he must know how much of the product is required so that a price can be associated with the product and the quantity to be provided.

It is the contention of this author that the training needs of programs similar in nature to the SANG program is one of if not the key to successful planning for the total program. What is involved? Facilities, equipment, funds and personnel are involved. And none of these requirements can be adequately described without a thorough insight into the program training needs.

The TRADOC regulation 350-100-1 provides a systematic approach to determining what and how much training will be required to assure the necessary skills and knowledge in a given TOE. To determine what skills and knowledges are needed, a Job Analysis must be made. The result of this analysis can then be expressed in terms of personnel, equipment, and facilities needed which in turn can be readily converted to fund requirements. The overall resources package will be discussed later. Let us now examine more closely the provisions of this TRADOC regulation from a curriculum development point of view.

Figure 4 reflects a seven-step process which, if followed, will result in the what and how much previously mentioned. The thrust of this study relates primarily to the first five of these steps as they provide the background needed to adequately plan and estimate training program schedule and cost. For the purposes of comparison however, all of the steps will be related to the Defense Systems Acquisition phases in Chapter IV. This step-by-step analysis assumes the existence of a detailed Table of Organization and Equipment (TOE). So, if a TOE does not exist one must be developed to reflect personnel and equipment requirements in a manner depicted in Appendixes B and C[7]. The TOE must be based upon the mission requirements of the organization being established.

Personnel requirements are stated in terms of the Military Occupational Specialities (MOS) needed to accomplish the TOE mission. This can be seen in the sample listing at Appendix B[7 & 8].

Having identified the specialties required for the mission, the "training analysis" which must form the basis for program personnel, facilities, training aids and equipment and funds can then be made.

The first step in the model is "Job Analysis." The requirement here is to provide a complete description of each MOS as shown in the sample identified at Appendix D. (Procedures for performing this step, and others in this chapter are outlined at Appendix D) The resulting "task inventory" gives you a complete list of what each individual in the unit must do in his job. The process depicted in Figure 5 is usually helpful when trying to identify "task." This task list represents the sum total of tasks that must be performed by the person in the specified MOS. Once complete, the

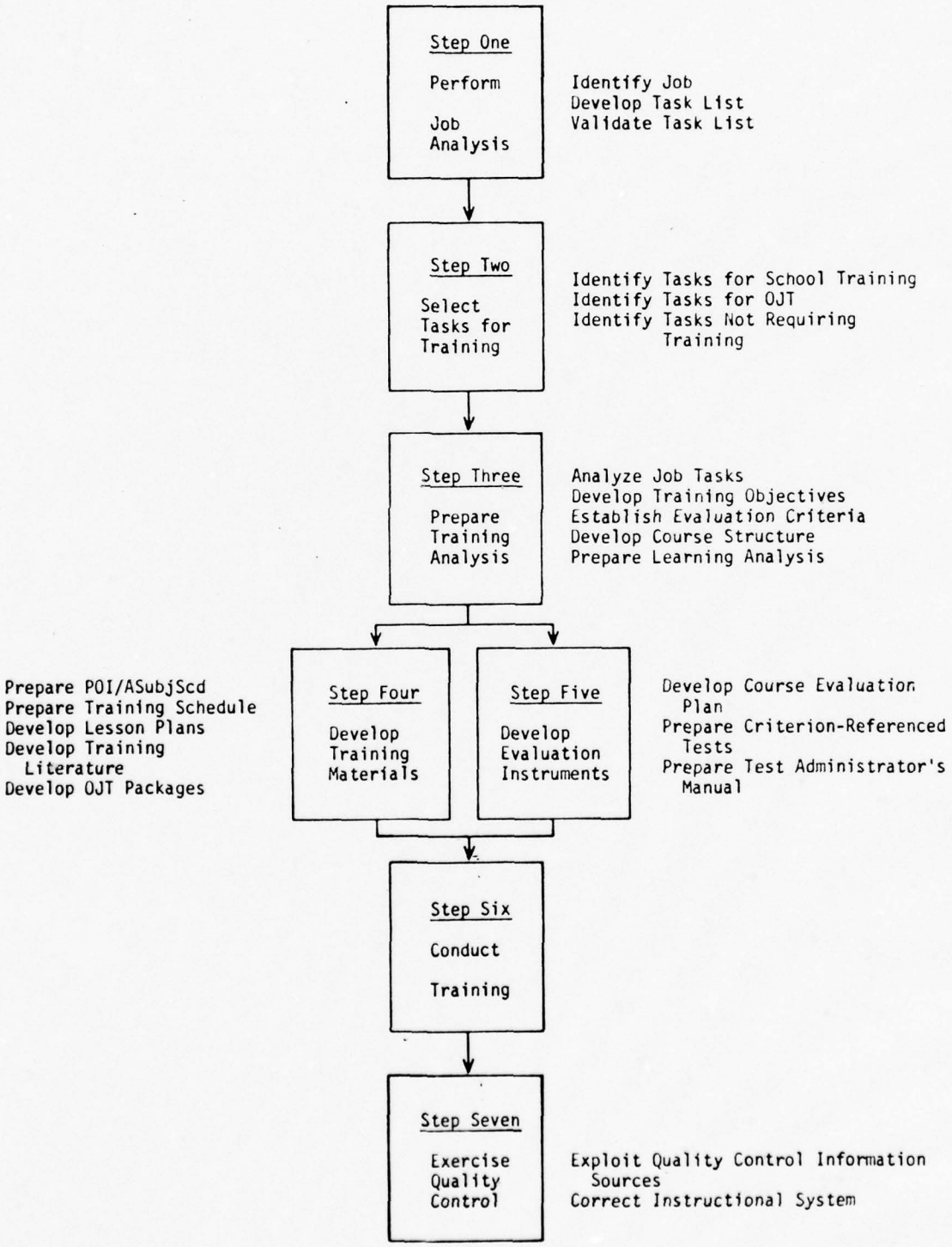


FIGURE 4 Procedural Diagram Listing Major Tasks Associated with the Systems Engineering Process.

JOB ANALYSIS

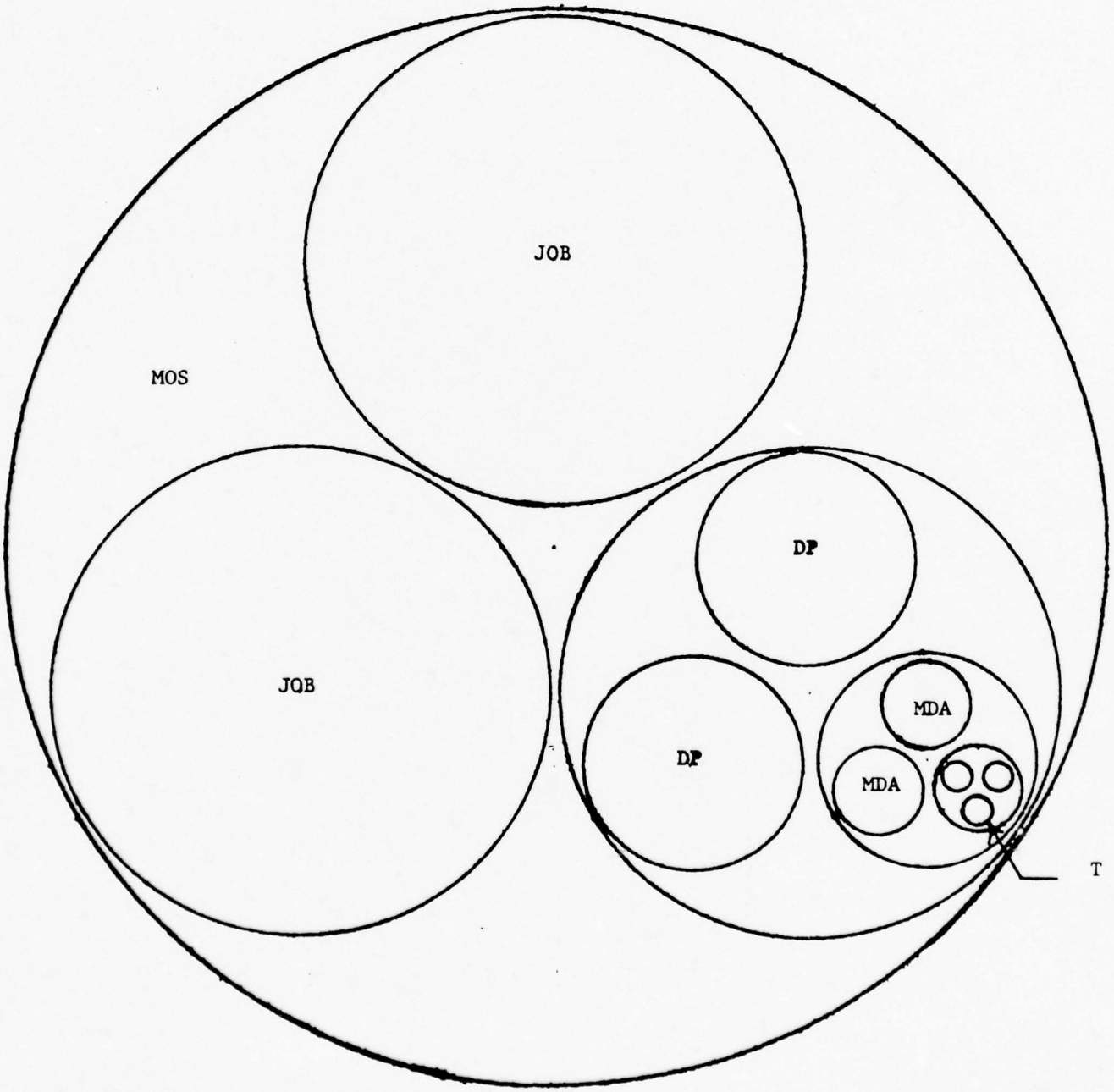


FIGURE 5

analyst then decides, based on a specified criteria, which tasks are not already known and which must be taught. This is an action that is accomplished at the second step of the model at Figure 4.

Task Analysis

Once the analyst knows which tasks must be included in his training program, he them moves to step three where he analyzes each of the identified tasks in terms of the skills and knowledges which an incumbent must posses and the standards necessary to achieve job success. Also provided at this time is a thorough description of the environment in which the task is to be performed. Enough is known at this stage to permit structuring or organizing the required training into some logical order that complements its presentation to the trainee in a sequence which is easiest for him to comprehend. The structuring is a simple matter of ordering Job Task Data Cards (JTDC) which have been prepared for each task. A sample of the card is shown at Figure 6.

Learning Analysis

Each task which has been analyzed in a format such as that suggested at Figure 6 must now be expressed in terms of the training objectives deemed necessary to get the required information across to the trainee. An acceptable format for this action is shown at Figure 7, Training Analysis Information Sheet (TAIS). Note that it is here in the "Learning Analysis" section that the foundation for solid planning and cost estimating begins to take shape. The reference, the methods of instruction, the media to be employed, the training equipment, facilities and the estimated time involved are all entries that must be made on this card. Recall that this action

JOB TASK DATA CARD

File No_____

TASK:

SUBTASK:

JOB TASK CONDITIONS.and STANDARDS:
(CONDITIONS)
1.

JOB SKILLS:##########
1.

JOB KNOWLEDGES: ##########
1.

RELATED ATTITUDES:

FIGURE 6

TRAINING ANALYSIS INFORMATION SHEET	File No:

1. Course;

2. TRAINING OBJECTIVE (Action/Conditions/Standards)
   a.

3. EVALUATION CRITERIA (Action/Condition/Standards)

4.LEARNING ANALYSIS

LEARNING ELEMENT (Performance) a	SKILLS and/or KNOWLEDGES b	REFERENCE c	METHODS OF INSTR. d	MEDIA e	TRAINING EQUIP. f	TRAINING FAC g	TIME ESTIMATE h

FIGURE 7

is taken for each task that makes up the job that was identified at an earlier stage of this process. When this learning analysis has been completed for all job tasks identified, the sum total and/or summary of the contents of these cards reflect ALL of the requirements for teaching the materials for the jobs in your program. In the hands of a competent contractor, these cards become the pieces of a puzzle that can be shifted and manipulated to logically identify and specify the various courses which must be scheduled, staffed for and presented in his program. He (the contractor) has the basic building blocks that will permit him to give the PM an accurate estimate of the training aids, equipment, facilities. instructors, assistant instructors, interpreters, and the amount of time that he will need to do the training. Time here affects the schedule and the schedule can easily be expressed in terms of dollars particularly where personnel are concerned.

The PM, however, does not monitor the contract from the level of training objectives. It is the collection of objectives that form a given course that the PM is interested in. So, the PM must require the development of programs of instruction (POI's) from the contractor. The POI's are based on the building blocks (TAIS). A comparison of the skill and knowledge requirements, for all program specialties involved, in a manner similar to that outlined in Appendix E helps the contractor clearly identify all courses required.[2]

Program of Instruction (POI)

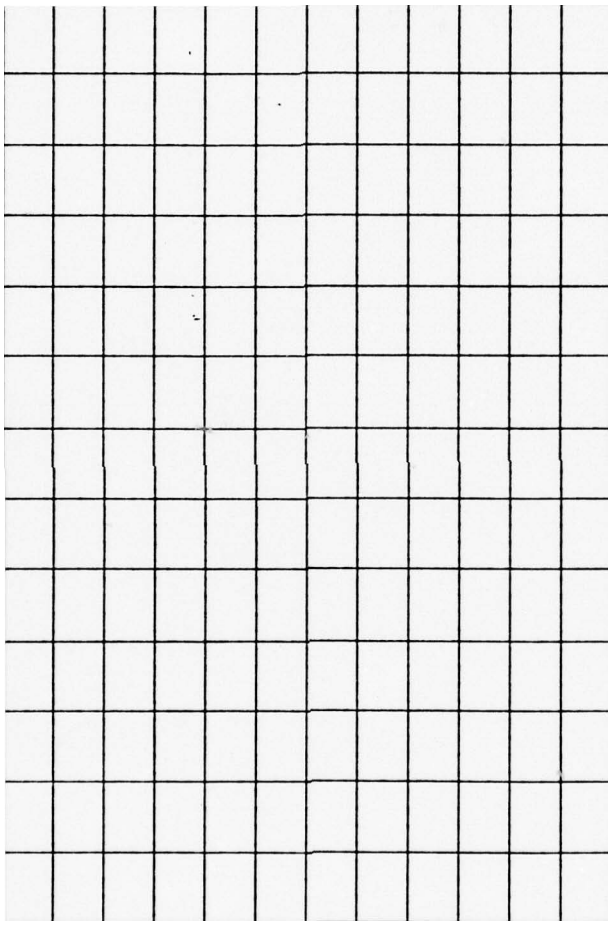
Having sorted the building blocks (TAIS), Figure 7, into what he believes to be the course mix required for him to prepare trainees to

perform all duties (tasks) which must be accomplished in their jobs, the contractor can assemble his POI's. It is this document that the PM is vitally interested in. Depending upon the contractor's organization, this document could be a "work package" or it may be viewed at a "cost account" level. At this Cost Account level, there can be an interface between the POI and DARCOM-P 715-5, Cost/Schedule Control Systems Criteria (C/SCSC).[6] This interface will be discussed in more detail in Chapter IV.

The POI alone is not sufficient to stand as a valid basis for planning and estimating program costs. Three other documents must be developed to support each POI. Based on the POI content, a sample format of which is shown at Appendix F, a master schedule (sample at Figure 8), and a manhour requirement package Figure 9[5], as well as the training aid, equipment and facility requirement package must be prepared. These three items together are frequently referred to as the "resource requirements" package. The master schedule reflects the number of days, weeks, months, etc., that will be required to complete the training and the manhour package reflects the number and kind of personnel involved over that specified period of time. These manhours can be readily converted to dollars.

To insure himself that he has a clear picture of what the total training program looks like, the contractor should develop schematics similar to those shown at Figures 10 and 11[2]. Such schematics help assure that everything meshes and that required training does not fall through an ever present crack.

Establishment of training requirements has now evolved to a point where common links to the other documents referenced earlier can be identified.



TRAINING MANHOUR COMPUTATION

(CLASS FREQUENCY OF ONE)

COURSE ____________________ CLASS SIZE _____

a SUBJ	b *** TYPE of INSTRN	c HOURS	x	d SECT*	x	e GROUPS**	=	f PMH	g REMARKS
			x		x		=		
			x		x		=		
			x		x		=		
			x		x		=		
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			x		x		=		

FIGURE 9

* Permanent division of one large class. For classes which are not broken into sections but need additional instructors for a given lesson, reflect requirement here and explain using footnotes.

** Temporary grouping of class or section performance or other activities requiring additional instructors.

*** Lecture, Conference, Demonstration, Practical Exercise.

DIAGRAMMATIC ILLUSTRATION OF OFFICER TRAINING

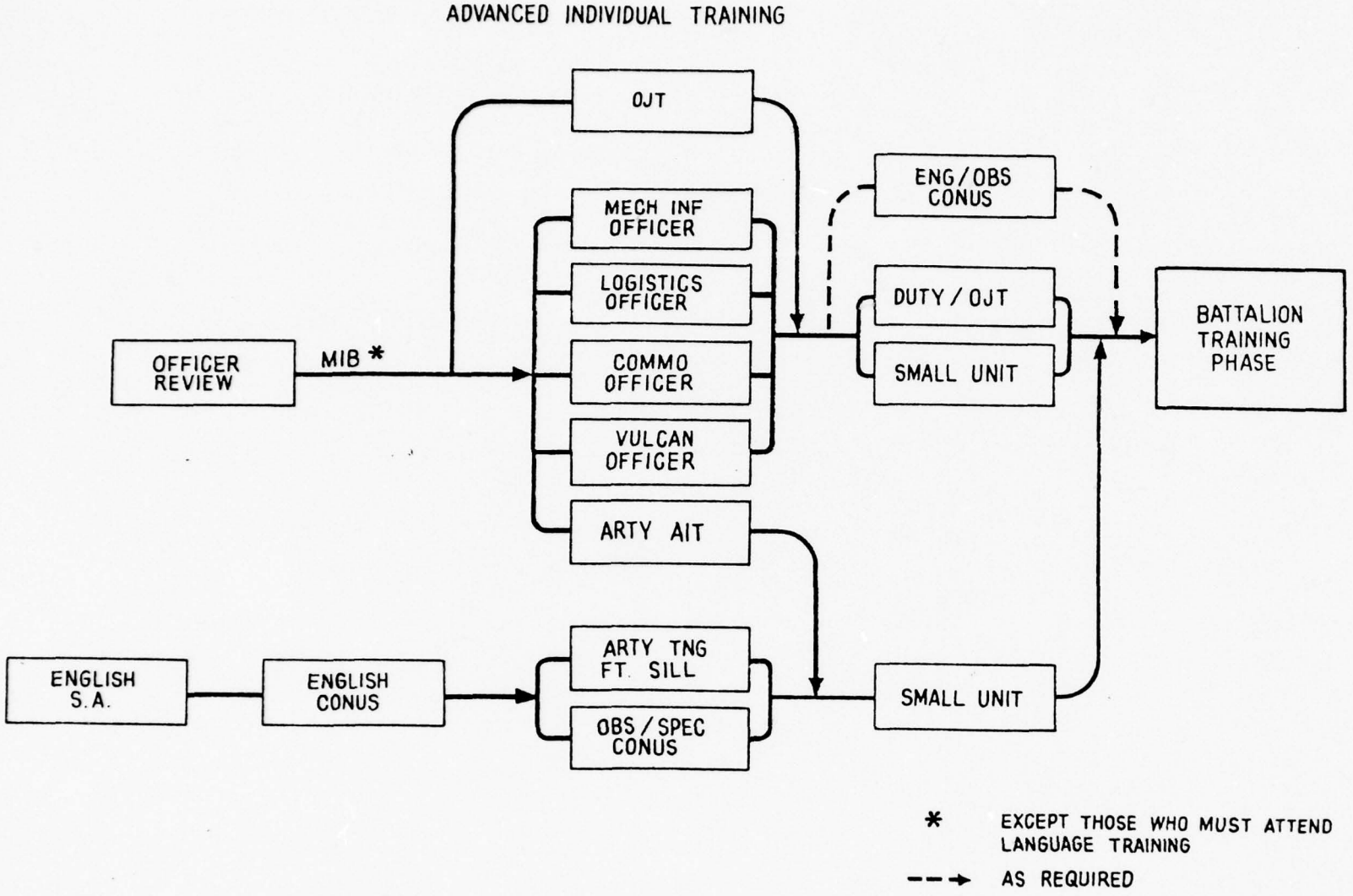

FIGURE 10

PHASED FLOW OF COLLECTIVE TRAINING : BATTALION

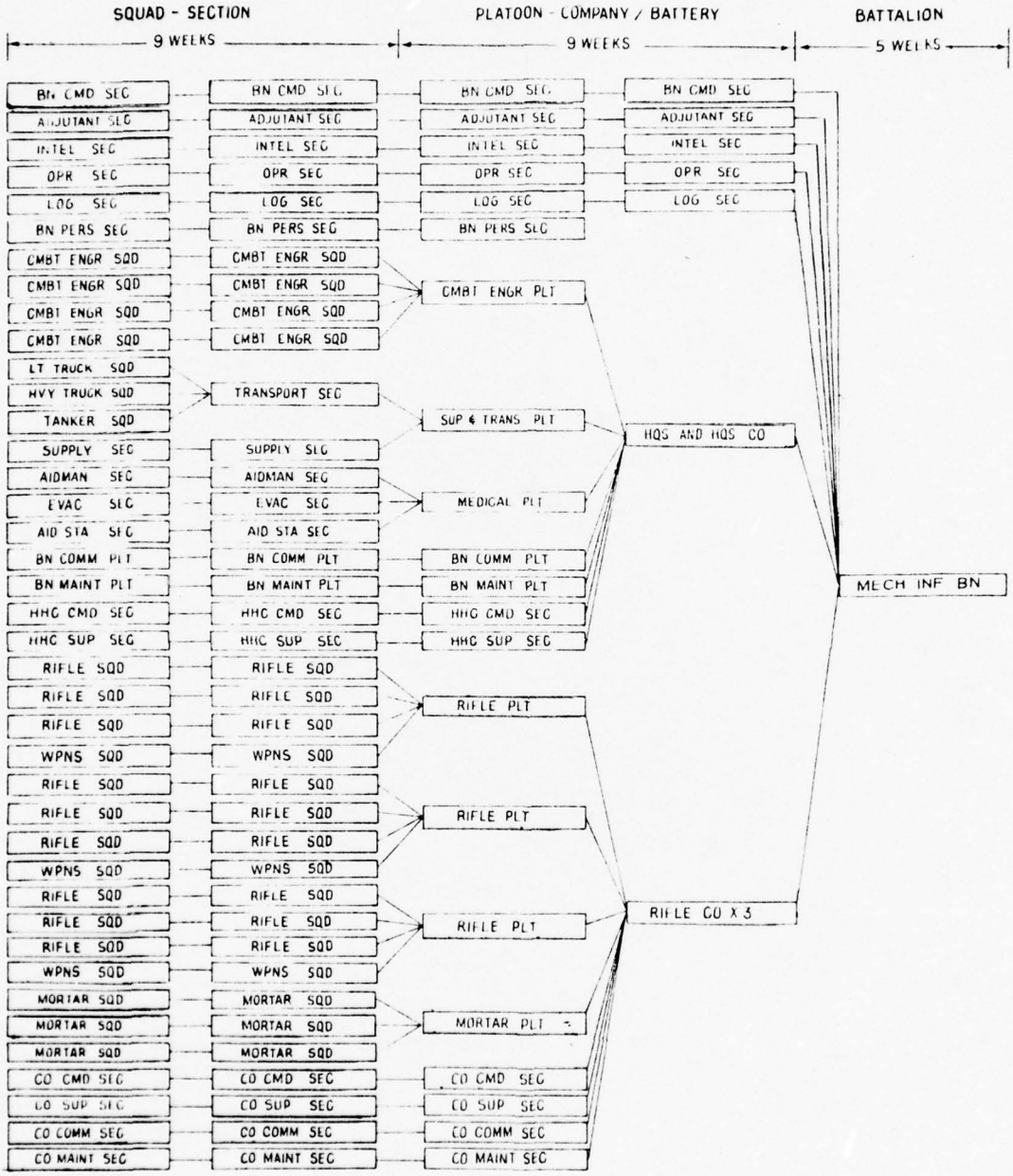

FIGURE 11

Let us now turn to the acquisition aspect of the study project to make the comparison between the systems acquisition and systems engineering of training processes.

CHAPTER IV

WHY THE SYSTEMS APPROACH?

Comparison of TRADOC Curriculum and Hardware Development Models

In programs similar to the SANG effort, the question often arises as to just what approach to achieving program objectives should be taken. This question usually very quickly reduces itself to one of what type of an individual would make the best PM for this very different type program. Would the program be stronger if the PM had a background rich in personnel training and education or do you want a man who has been associated primarily with the systems acquisition field.

On the one hand one might argue that training is predominantly the driving force, that the whole program, in one way or another, is closely associated with the training aspects of the overall effort. On the other hand, you could argue that a man strong in the acquisition process is a must because of the requirement to procure a wide variety of materiel for both training and equipping the deployed units.[9] A natural line of thought then is to get a man who has extensive experience on both sides. The basic weakness in the third option is that men with broad background in both process are often difficult to find.

So, which way do you favor? It is the contention of the author that a clear cut answer is not available. That the only solution is to evaluate all alternatives and take the one which has the fewest negatives when compared to the job that must be done.

With this as a spring board, let us look now at the situation from two vantage points - first that of the TRADOC systems engineering approach to curriculum development and training then to that of the Defense Systems Acquisition process. In making this comparison, refer to Figure 12 which shows the objectives of the different phases of acquisition shown in the center with activities which might take place at these points in each of the two processes being compared displayed along each side.

A thorough investigation of this comparison would appear to build a strong argument that there is really no great difference in the basic philosophies of the two approaches. Based on this comparison one might also take the position that it really matters little which side of the community the PM comes from. This could be a valid estimate but there are other factors that should be considered before setting this line of thinking in concrete. There is a great tendency for any individual to emphasize his strengths in the job that he is called upon to perform. To the extent that this holds true, one or the other aspects of the program will get less emphasis depending upon the background of the PM. Such an occurrence in either direction would be detrimental to the overall program. The author offers the following for consideration.

Look first at the general nature of program management. The critical requirement is that there must be good effective and efficient integration and management of personnel, equipment, facilities in terms of the funds, either required or available, to achieve a desired result. We hardly have to look further to see the item which begins to tip the scales. In program management, a great deal of emphasis is placed on financial management

aspects of most programs and the many interfaces that must be made at the higher levels of government. The author believes that indeed either individual could get the job done given that he is willing to take upon himself the responsibility of developing a healthy appreciation for the area in which he may have some weakness.

Considering the realities of situations such as those likely to surround programs similar to the SANG, the scale seems to favor a person with a Defense Systems Acquisition background. In this type program, time and availability of familiarization opportunity are critical factors. There is usually little if any time and opportunity for the PM to familiarize himself with financial management for this is frequently the first concern of those associated with the program. There is limited time for the PM to develop the required appreciation for the training aspects of the program through experts who must be brought on board early in the program. It must be emphasized here though that there is no time to waste in getting up to speed on the training requirements. Thus it is a must that a training advisor be brought on board early (in the initial planning phases) to assure that the plan is structured in a manner which will lend itself to accurate cost estimating. The plan must provide a general frame that will enable ready conversion of training requirements and support into dollars for inclusion in the overall budget.

The rationale then for favoring Defense Systems Acquisition is, in short, it is probably easier to give an open-minded individual the required appreciation for training requirements than it would be to bring him up to speed on the financial aspects, given the environment in which he is likely

to find himself. He has been exposed to the requirements of the acquisition cycle outlined in Figure 12. Thus, he needs only to realize the similarities between the actions which must take place on the training side as related to the objectives reflected at the appropriate acquisition phase. He must realize though that the same kind of emphasis MUST be placed on a like situation. If in the development of a piece of hardware, he would send the contractor back to the drawing board for doing something improperly, even if it causes a program slip, likewise he should send the training contractor back to the drawing board if his task lists, training analysis, POI etc., are not developed in accordance with specifications. There is always the tendency to overlook these inadequacies saying that they can be corrected later. Such a stand should never be taken under any circumstances but it is even more critical in a contractural situation. The estimates that must be made concerning personnel, facilities, equipment, training aids with regard to the money required to support them depend directly on the validity of the analysis of training requirements. For years it has been said, and accepted in many circles, that training requirements are difficult to get a handle on. With the tools, techniques, and procedures currently available, there is no reason for the continued poor and inadequate training requirement estimates. PM's and others who have to plan and forecast training requirements need only to be familiar with these procedures and insist they be applied in accordance with specifications as vigorously as he would insist that the size of a piston for an engine be no more than + or - a specified part of an inch. In the following section a model will be outlined to serve as a general guide for effective integration of training requirements

HARDWARE	ACQUISITION PHASES Program Initiation	TRAINING
Technical economic and military bases are established for program; The basic management approach delineated; Broadly defined statement of the operational (including log support) need is translated into technical goals for a preferred system.	Provide the basis for selection of a system which warrants further development to satisfy a realistic operational need	Gather information on purchasers stated need; Analyze data to determine extent of training need; Develop TOE to support identified requirements; Determine broad management strategy for accomplishing training objectives
	Demonstration & Validation	
Analyze operational need Verify system solution Complete concept analysis (threat, mission, feasibility, risk, cost, trade-offs, etc.)	Verify early conceptual effort outputs and to further refine performance specification, cost and schedule estimates and subsystem interfaces.	Analyze TOE in terms of tasks required for support; Analyze each task to determine skills and knowledges required; Formulate training objectives and structure courses; Develop POI's, requirements, and master schedules; Estimate cost of training program.
	Full Scale Eng. Development	
Total system, including all items necessary for support, is specified in detail, developed, fabricated in limited quantities, tested and evaluated.	To complete system design, test and evaluation before commitment to full production	Develop lesson plans, evaluation instruments, supplemental materials, and required training aids. Perform total system check out on small reference group.
	Production	
Weapon system produced for operational use. Training equipment, spares, support equipment produced	To produce and deliver operational systems (including all necessary items of logistic support) for deployment by optrnal forces	Train unit personnel in accordance with approved POI's
	Deployment	
Operating forces use and sup-support the system. Initial deliveries into the inventory and phase ends when system is revised from opn. use.	To provide systems and support to operational units.	Mold personnel into operational units. Deploy trained units and collect quality control data.

FIGURE 12

into programs similar in nature to the SANG to include cost estimating.

Planning the Total FMS Training Package

As mentioned toward the beginning of this study, the author had noted several documents which are published by different agencies and levels of the government which taken alone would have relatively insignificant effect on determining the cost of a FMS case training package. These documents may be likened to the pieces of a puzzle which are put in place or drawn into perspective for the first time as they relate to FMS programs and packages. When pertinent portions of these documents are brought together, a great deal of clarity can be injected into the training area of program management, and possibly other facets of management, which have been somewhat hazy in the past.

The planning model at Appendix G is used to illustrate the general activities believed to be essential to adequate and smoothly flowing plans for complex FMS packages similar to the SANG program. The model is outlined in terms of "Teams," their types, their functions, and the "products" to be expected from their efforts.

The purpose of the first team is to gather all pertinent information and thoroughly evaluate it in terms of what the purchaser has indicated he wants to buy. The results of this evaluation is a clear description of what is desired in the program . This action equates to "Program Initiation" in the systems acquisition process. Note that the team is an "integrated" one to make sure all areas of expertise are covered. Collecting the required data includes techniques varying from interviews to mini research efforts.

The second team must then take the product of team one and thoroughly analyze it in terms of the training that will be needed to meet all of the skill and knowledge requirements critical to the mission of the organization(s) to be trained. Note that the team in this case is strictly training and compares to the "Demonstration and Validation" phase of the acquisition cycle. While this task could be done by a government team, it probably should be done by a Contractor with a "contract definition" type arrangement. Whichever manner is chosen, care must be exercised to assure that expertise in all technical areas that were identified in the TOE is included. These team members must, in addition to being technically qualified, be knowledgeable of the TRADOC systems engineering approach to curriculum development described earlier in the study. If they are not, then one of two actions must be taken where they are concerned. They must be either replaced with someone who has a background in that system or he must be taught the system. The former is preferable because a person who is new to the technique is not always effective when he first begins to utilize it.

It is at this point also that the foundation is laid for estimating the cost of the training required. The curriculum package includes the POI, master training schedule (for each course) and the Manhours necessary to support that POI. These documents are illustrated at Appendix F, and Figures 8 and 9. These POI packages can then be related to the contract and contractor organization in the form of either/or a combination of the matrixes shown at Figures 13 and 14[6]. The POI itself may take the form of a work package or, if the contractor desires, it may be further broken down for his convenience. The PM will probably desire to monitor cost and

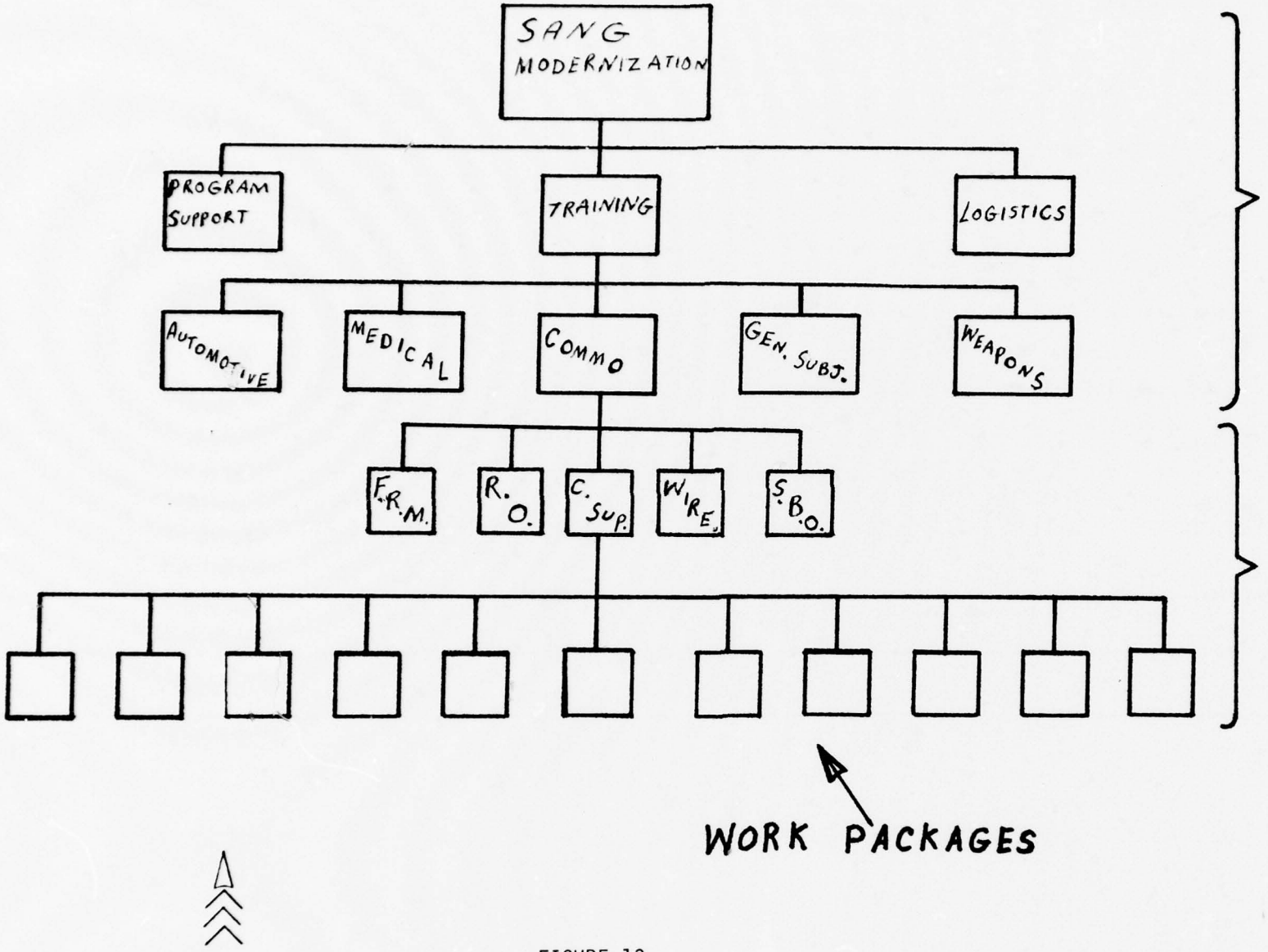
SANG
MODERNIZATION
PROGRAM SUPPORT
TRAINING
LOGISTICS
AUTOMOTIVE
MEDICAL
COMMO
GEN. SUBJ.
WEAPONS
F.R.M.
R.O.
C. SUP.
WIRE
S.B.O.
WORK PACKAGES

FIGURE 13

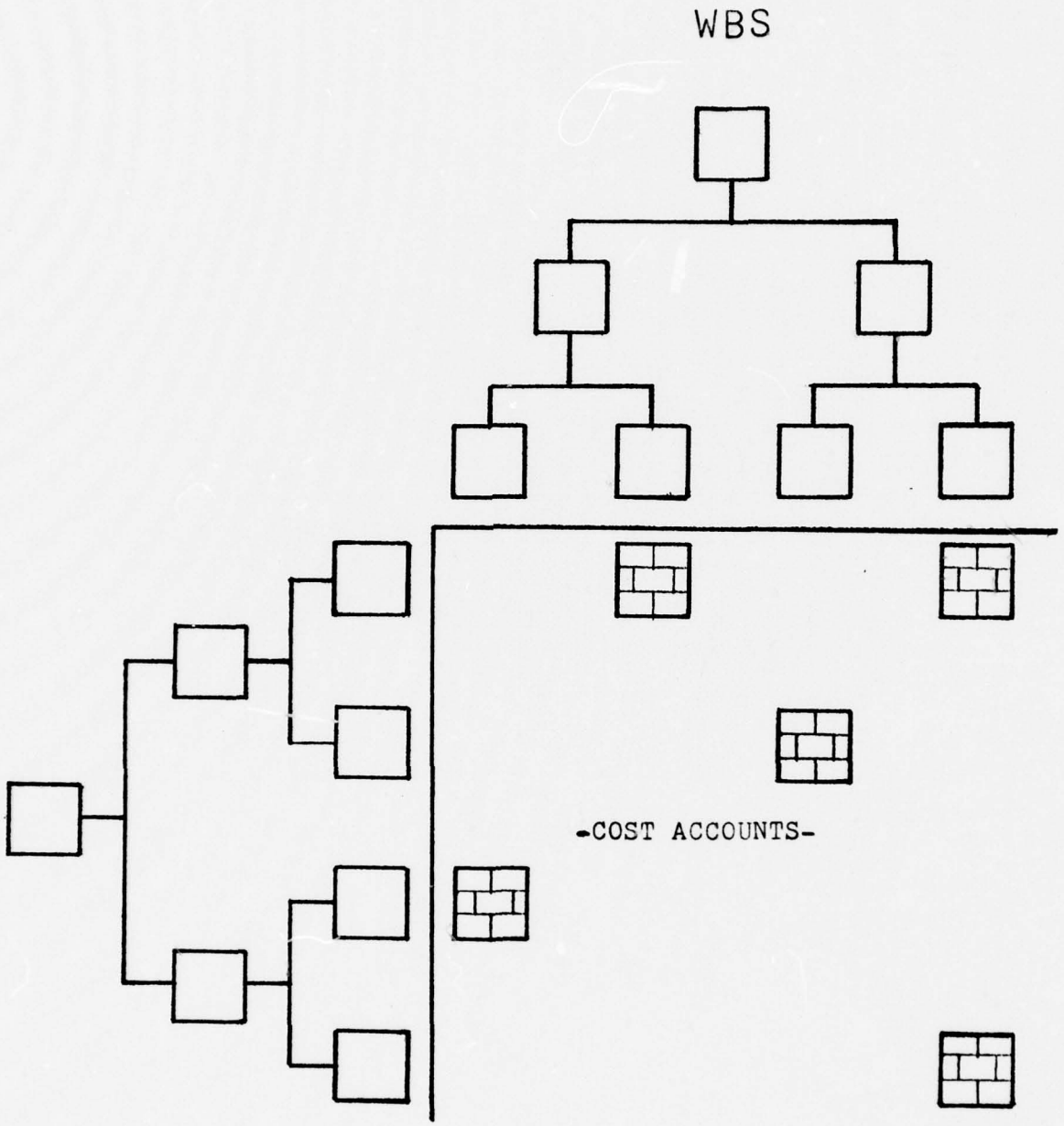

FIGURE 14

schedule from the total POI though. This Work Breakdown Structure (WBS)[10] and organization can then be set up in the manner prescribed in DARCOM-P 715-5, C/SCSC, which spells out cost and schedule control procedures in great detail.[6] The C/SC Procedure enables effective analysis of cost and schedule variations and the tracing of these variations directly to their sources by following them from one level of the WBS to the other (Figure 15)[6] until they are pinpointed. Variations are usually much easier to explain when they can be visually traced in the manner just outlined. This technique also permits a more orderly implementation of directed changes and control of other changes affecting work packages. The change implementation process is graphically represented at Figure 16[6] The net result of actions by team number 2 is a valid input into the efforts of team Number 3.

While the training team is determining training requirements, the Logistics team can be doing the same type analysis for the equipment requirement section of the TOE. When both of these actions are complete they can be merged resulting in the total equipment and training requirements for the program. Accurate FMS case estimates are then within the PM's grasp and can thus become a valid part of his total program estimate. Required training and related facilities are also an outgrowth of these two actions so that accurate estimates can be made in that area.

While team four is preparing and distributing the RFP, which will result in the signing of a contract for the total program effort, the onboard contractor or government team number two should be validating each course curriculum as required. Team six should also be taking parallel action here to bring PMO personnel requirements up to authorized levels.

VARIANCE ANALYSIS

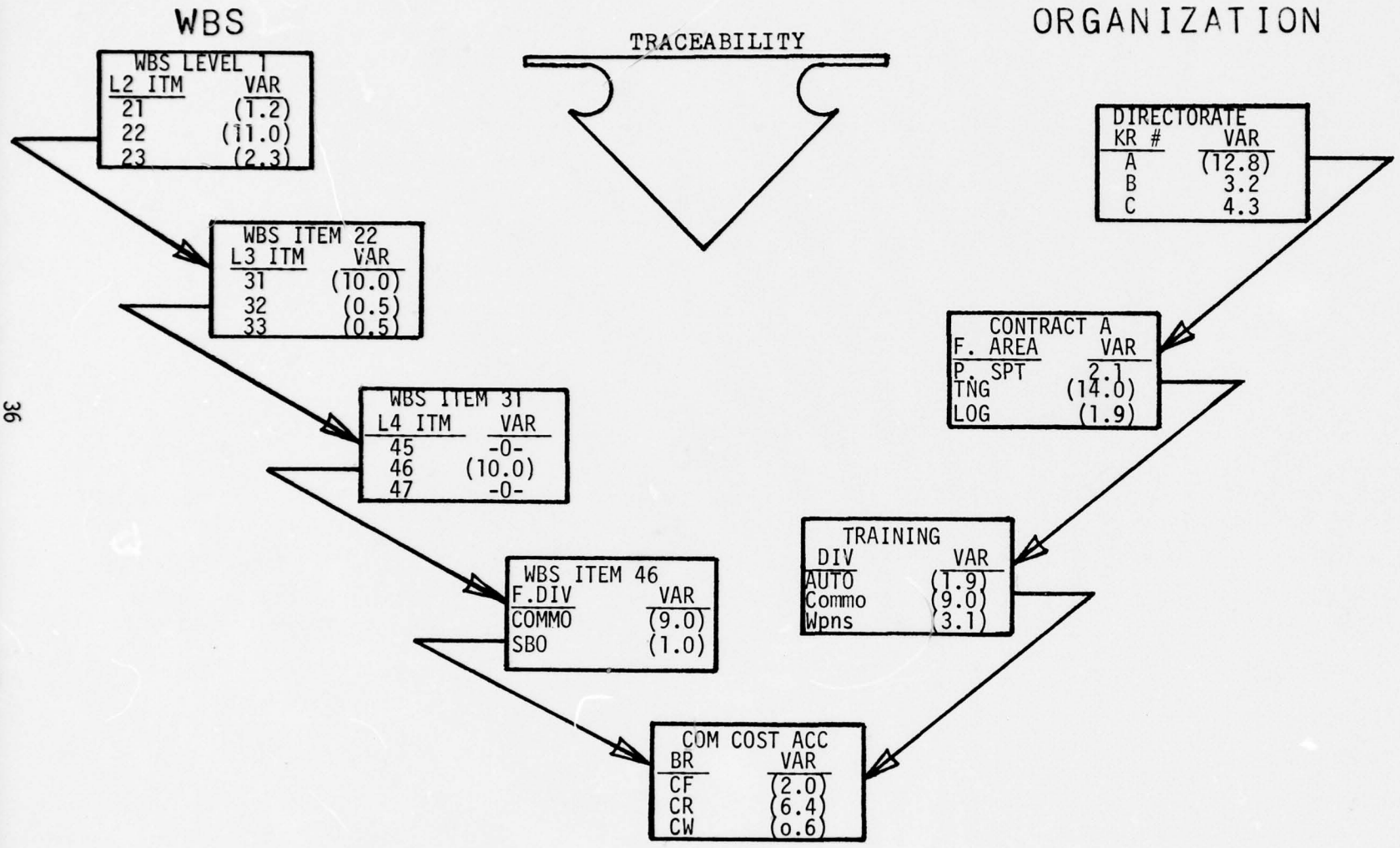

FIGURE 15

REVISIONS

INCORPORATE DIRECTED CHANGES

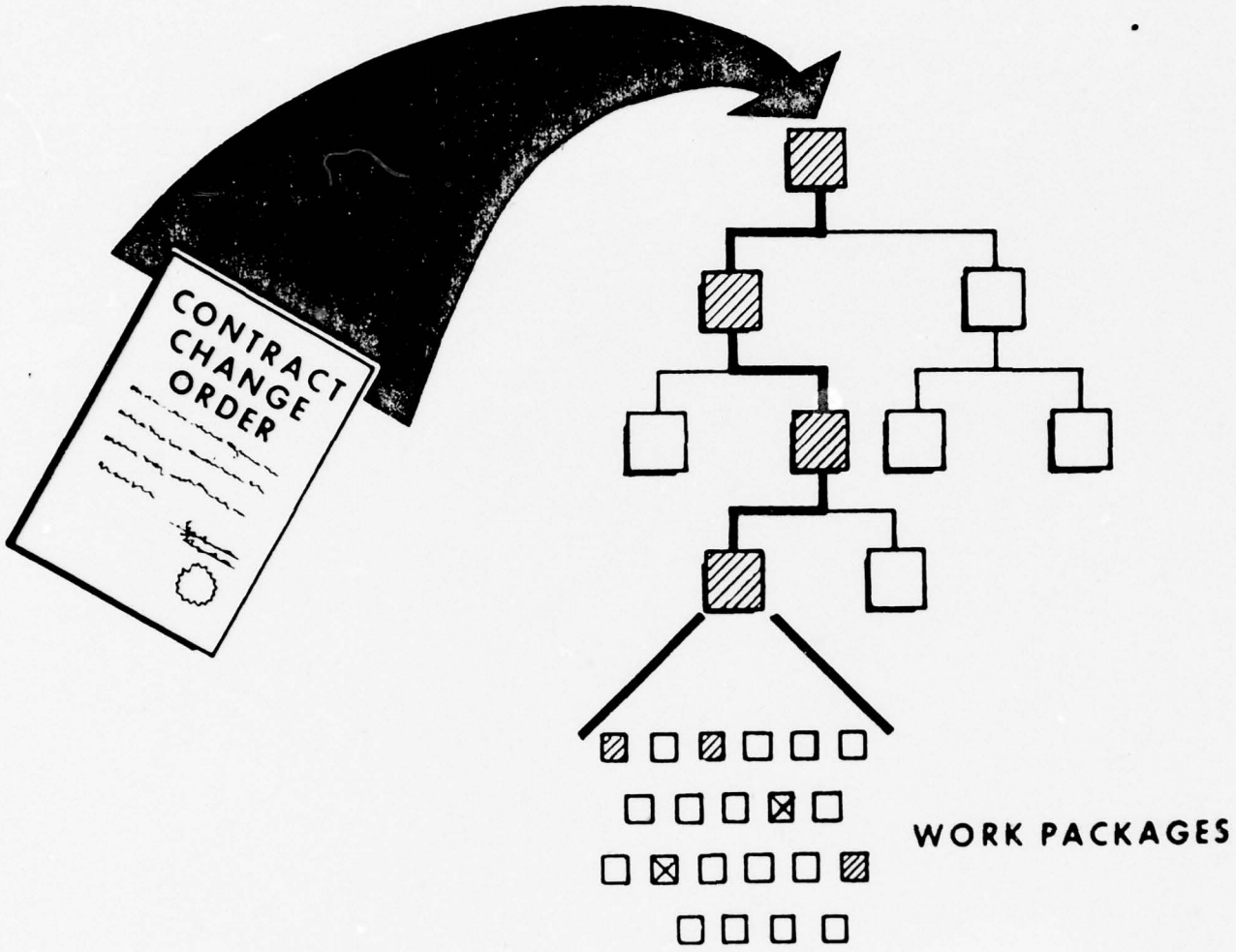

FIGURE 16

Team five, which is probably a streamlined version or combination of the Source Selection Advisory Council (SSAC) and the Source Selection Evaluation Board (SSEB), evaluates the proposals which resulted from the efforts of team four. Immediately upon the signing and award of the production contract and issuance of the "notice to proceed" (NTP), the winning contractor is given the POI packages which resulted from the efforts of team two. During the contractor's build-up time, one of his prime tasks will be to develop lesson plans, evaluation instruments, student supplemental information, and any training aids that may be needed to support his training effort. He also validates his training materials during this time frame. The contractor is now ready to launch into face-to-face (production) contact with the personnel to be trained. The face-to-face contact training action compares to the production phase of the system acquisition process. The program concepts were solidified in program initiation, the POI's were developed, lesson plans produced and validated (demonstration and validation) evaluation devices were developed and all were validated on small reference groups at this time, the "full scale engineering development" phase. And so, we are now ready to begin rolling the product (the student) off the assembly lines (the various courses that the students go through to enable them to perform in the field). The student works his way through the so called assembly process represented by the flow controls depicted at Figures 10 and 11 At the end of this maze they become a finished member of the finished end item product (the battalion) which is deployed fully capable (or so we think) of performing its assigned mission.

During the deployment phase, quality control data is collected on these finished products (battalion personnel) in a continuing effort to identify and correct weaknesses which are the result of the design and production phases (curriculum development, and conduct of training) which should give you a higher quality new finished product in the field.

The purpose of this comparison again was to show how knowledge of the "system acquisition" process can be easily transferred to a curriculum development and training environment. An awareness of the high degree of similarity between the activities of the two processes, each in its own setting, should make a PM, who finds himself in the latter environment, more capable of maintaining complete control over his program.

It is not within the scope of this study to go into the details of the techniques involved in using the various documents described. Rather, the intent is to make known the fact that if they are properly interfaced with each other, they should provide a sound basis for more accurate cost estimates where training is concerned.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. There is a high degree of similarity between the Defense Systems Acquisition procedures and the TRADOC systems procedure for curriculum development and conduct of training.

2. Training requirements can be developed in a manner which allows valid cost estimates to be made.

3. There is a valid rationale associated with current philosophy of selecting PM's for SANG like programs from among individuals with PM or PM related experience in the systems acquisition process.

4. That success of similiar programs appear to depend heavily upon the current PM involvement between the contractor and the foreign government involved.

5. That training aspects of this type program must be addressed at the very outset of program planning if valid cost estimates are to be expected and made.

6. That Cost/Schedule Control Systems Criteria are appropriate for the training aspects of the SANG like FMS programs.

Recommendations

1. That DODD 5000.1 and 5000.2 be updated to recognize and reflect this new dimension to program management and the acquisition process.

2. That DARCOM-P 715-5 and associated documents be appropriately revised to recognize and reflect the possibility of C/SCSC applications in programs similar to the SANG.

3. That MIL STD 881A, WBS and associated documents display appropriate examples as to the application of the WBS techniques to similiar type contracts.

4. That PM's and their training managers and education/training advisors being assigned to programs similar in nature to the SANG program be given an opportunity to review this study.

5. That copies of the study be made a part of the U.S. Embassy library in any country where this type program is undertaken.

6. That AR 1000-1 and associated documents be updated to recognize the implications of the new dimensions of programs such as the SANG.

LIST OF FIGURES

LIST OF APPENDIXES

AMC

DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20315

IN REPLY REFER TO

DAAG-PAP-A (M) (27 Apr 73) DALO-ILS-D 27 April 1973

SUBJECT: Saudi Arabia National Guard Modernization Program

SEE DISTRIBUTION

1. On 19 March 1973, the Government of the United States and the Government of Saudi Arabia (SAG) signed a Memorandum of Understanding (MOU) which commits the U.S. to assist the SAG in a program to modernize the Saudi Arabian National Guard (SANG). (See Inclosure 1).

2. The program consists essentially of three major elements:

a. Sale of Defense equipment and services through Foreign Military Sales (FMS) channels.

b. Design and construction of necessary facilities, installations and supporting elements.

c. Development, installation and initial operation of training, communications, logistics, and maintenance systems.

3. The Department of the Army has been designated as Executive Agent of the Department of Defense in carrying out the provisions of the MOU. In designating DA as Executive Agent, Office of the Secretary of Defense has requested high priority be accorded the systematic and timely implementation of this politically important, urgent and complex program.

4. The Deputy Chief of Staff for Logistics has overall DA staff responsibility for the SANG Modernization Program. Other DA staff agencies will support the program within their respective functional areas.

5. Consistent with the designation of the DA as DOD Executive Agent, the Commander, AMC, is assigned responsibility

B. ENLISTED JOB TITLES

CAREER FIELD / TITLE	MOS SANG	MOS US
1. INFANTRY		
a. Light Weapons Infantry	11B	010-11B
b. Infantry Indirect Fire	11C	010-11C
c. Reconnaissance	11D	250-11D
d. Anti-Armor	11E	010-11H
e. Infantry Operations	11F	250-11F
f. Infantry Intelligence	11G	250-11F
g. Infantry Direct Fire	11H	010-11H
h. Infantry Senior Sergeant	11Z	010-11G
2. ENGINEER		
a. Combat Engineer	12B	030-12B
b. Combat Engineer Senior Sergeant		030-12C
3. ARTILLERY		
a. Field Artillery Crewman	13B	041-13A
b. Artillery Operations/Fire Direction	13E	250-13E
c. Field Artillery Survey	13F	412-82C
d. Artillery Mechanic	13G	642-45L
e. Artillery Senior Sergeant	13Z	041-13Z
4. AIR DEFENSE		
a. Vulcan Crewman	16B	043-16R
b. Vulcan Mechanic	16C	101-27F 121-24M
c. Vulcan Senior NCO	16Z	043-16Z
5. COMMUNICATIONS		
a. Wireman/Switchboard Operator	36B	621-36K
b. Radio Operator	36C	231-05E 201-05B
c. Radio Repairman (Mechanic)	36D	101-31E
d. Communications Senior Sergeant	36Z	101-31G
6. MAINTENANCE		
a. Wheel Vehicle Mechanic	63B	610-63B
b. Recovery Specialist	63C	610-63F
c. Fuel and Electric Systems Mechanic	63D	610-63G
d. Turret Mechanic	63E	643-45K/N
e. Puncture Mechanic	63F	760-57C
f. Welder	63G	701-44C
g. Generator Mechanic	63H	662-52B
h. Maintenance Senior Sergeant	63Z	610-63Z
7. TRANSPORTATION		
a. Motor Transport Operator	64B	811-64C

CAREER FIELD	TITLE	MOS SANG	MOS US
8.	ADMINISTRATION		
	a. Clerk Typist	71B	510-71B
	b. Movements Clerk	71C	514-71N
	c. Equipment Records Clerk	71D	510-71T
9.	ACCOUNTING		
	a. Finance Clerk	73B	542-73C
10.	PERSONNEL		
	a. Company Battery Clerk	75B	500-75B
	b. Personnel Management Specialist	75C	500-75C
	c. Personnel Records Clerk	75D	500-75D
	d. Personnel Senior Sergeant	75Z	500-75Z
11.	SUPPLY		
	a. Unit Supply Operations	76B	552-76Y
	b. Armorer	76C	552-76Y
	c. Repair Parts Clerk	76D	551-76S
	d. Supply Senior Sergeant	76Z	551-76Z
12.	MEDICAL		
	a. Medical Specialist	91B	300-91B
	b. Clinical Specialist	91C	300-91C
	c. Medical Senior Sergeant	91Z	300-91Z

TO&E EQUIPMENT PROCUREMENT
IN THE U. S.

LIN	NSN/NOMENCLATURE/LN	QUANTITIES						
		Mech Bns (4)	Arty HQ	AD HQ	Trn Ctr	Spt Maint	Maint Float	Total Auth
A22496	Aiming Circle	40	2	0	4		2	48
B07126	Axle Cable Reel: RL-27	60	2	2				64
B67766	Binocular: 7X50	615	20	15	12		10	673
C52601	Cabinet Tool and Spare Parts	8			2			10
C53012	Cabinet Tool and Spare Parts: 3 Shelves	4						4
C53149	Cabinet Tool and Spare Parts	20			2			22
C53286	Cabinet Tool and Spare Parts	24	1	1	2			28
EN0002	Cannon 20mm (Oerlikon): Turret Mounted in V-150 (20mm)	12			1		1	14
C68719	Cable Telephone: WB-1/TT DR-8 1320 Feet	584	10	5	8			607
C68856	Cable Telephone: WD-1/TT RL-159 5280 Feet	248	20	10	6			284
C68993	Cable Telephone: WD-1/TT	188	10	5	21			224
E63728	Compass Unmounted Magnetic: Mil Graduations	200	12	6	3			221
E69242	Compressor Reciprocal Power Driven: 15 CFM	4			1		2	7
E70064	Compressor Reciprocal Power Driven: 5 CFM	24	1	1	1			27
E92915	Control Radio Set: AN/GSA-7	4			2	2	2	10
F09390	Cookset Field: 5 Man	1012	24	16				1052
F91490	Demolition Set Explosive Electric	16			4		4	24

TRAINING ANALYSIS TECHNIQUES

CONTROL POINT 1

I ANALYZE THE JOB

A. Identify Job

1. Analyze job structure
2. Record duty positions
3. List types of units and org.
4. List related units, org. & MOS
5. List major duty areas where job is found
6. Give details of work environment
7. Identify need for supervision
8. List in detail related equipment
9. List ALL known sources of information (official, unofficial, printed, or unprinted)

CONTROL POINT 2

B. Develop Task Inventory*

1. Outline form

(a) List major duty areas
(b) State, in action terms, tasks to be performed

2. Matrix form

(a) List tangiable objects
(b) List action verbs
(c) Show action object relationship
(d) Add qualifiers as needed

C. Validate Task List (field survey -debriefing, questionnaire, telephone, etc.)

CONTROL POINT 3

II ANALYZE TASK LIST

A. Develop Selection Criteria

B. Identify Prerequisite Tasks

* Break complex tasks into subtasks as required

C. Identify Tasks Suitable for OJT

D. Identify Tasks Requiring School Training

III ANALYZE TASKS SELECTED FOR TRAINING

A. Prepare Course Development Directive (CDD)

B. Identify Tasks Which May Be TOO Complex or Simple

CONTROL POINT 4

C. Prepare Job Task Data Cards (JTDC)

1. List conditions which significantly influence task performance.

2. Prepare list of standard job conditions

3. Record job standards (published, implied, derived)

4. List skills and knowledges needed to perform task.

5. Identify skills and knowledges which require school training

6. Identify attitudes, related to skills and knowledges to be trained, which must also be trained

CONTROL POINT 5

7. Sequence (Cluster) JTCD's, based upon skills, knowledges, and attitudes.

8. Identify and cross-reference duplicate skills and knowledges (S/K)

D. Prepare Training Objectives

1. Identify actions, in behavioristic terms, to take place in training environment

2. Describe conditions under which actions will be taken

3. State standard to which action is to meet

E. Prepare Training Evaluation Criterion Statements for Each Objective

CONTROL POINT 6

F. Prepare Evaluation Planning Information Sheets (EPIS)

1. Sequence & list tng obj within clusters

2. Develop broad evaluation concept (Evaluation Plan)

IV. DEVELOP TRAINING MATERIALS

CONTROL POINT 7

A. Perform Learning Analysis for Each Tng Obj

1. List performance elements (teaching points)

2. Sequence performance elements for maximum teaching effectiveness

3. List appropriate references for each perf. element

4. Determine best methods of instruction to achieve stated training objectives

5. List appropriate media, aids, etc. required

6. List required training equipment

7. Describe necessary facilities

8. Estimate instructional time for each perf. element and combine for tng objective

B. Prepare Program of Instruction (POI) Based On Learning Analysis

1. Identify paramaters of LP's in terms of obj to be included

2. Analyze tng requirements (POI) to determine PMH

3. Determine resource requirements

(a) Personnel
(b) Equipment
(c) Facilities

CONTROL POINT #8

C. Prepare Transmittal Package and Forward to PMO For Action.

CONTROL POINT #9

D. Continue Preparation of Instruction Materials

1. Prepare lesson objectives

2. Sequence performance elements and outline LP's to the detail required to achieve training objectives

V. DEVELOP EVALUATION INSTRUMENTS

A. Develop Detailed Course Evaluation Plan (to support F 2)

B. Develop Strategy For Alternate Test Forms

C. Design Tests in Terms of Tng Criterion Statements

D. Outline Strategy For Analyzing Test Results

E. Prepare Administrator's Manual

F. Validate And Publish Tests

EXAMPLE OF TRAINING ANALYSIS MADE BY MOS/COURSE TITLE

COURSE TITLES	MOS																				
	ARTY	INF	11B	11C	12B	13E	16C	36B	63C	63Z	64B	71D	73B	75C	76Z	91B	ETC	LTC	TOTAL
ENGLISH																			
LITERACY																			
OFF REVIEW	1	37																	38
MECH INF OFF		37																	37
COMMO OFF																			
LOGISTICS OFF																			
VULCAN OFF	1																		1
NCO REVIEW			46	12	5	7	1		7	7	4			2	1				92
MECH INF NCO			46	12															58
MED SUPV															1				1
LOGISTIC TECH														1					1
MAINT SUPV									7										7
INTELL NCO																			
COMMO SUPV																			
OPN NCO																			
MECH INF			392	63															455
MEDICAL SPEC																			
SUP SP/WRHS														1					1
ARMORER																			
TURR MECH																			
WH VEH MECH									16										16
WELDER																			
GEN OPER																			
FIELD RADIO MECH																			
WIR / SWCHBD OPER								24											24
RADIO OPER																			
VUL SYSTEM MECH							4												4
VULCAN CREW																			
TOW CREW																			
90 MM CREW																			
20 MM CREW																			
COMBAT ENGINEER					43														43
SUR SPEC						69													69
FIRE DIRECT COMP																			
ARTY MECH																			
ON THE JOB TRAINING										46	7	3	1						57
DRIVER TRAINING																			

MOC

EXAMPLE: FORWARD OBSERVER PROCEDURES	C	D	PE	TOTAL
1. Introduction	1			1
2. Map Reading	½	½	3	4
3. Preparatory Operations	1		1	2
4. Location of Targets		½	1½	2
5. Call For Fire	1	½	2½	4
6. Adjustment Procedures	1		2	3
7. Deviation Adjustments	½		1½	2
8. Asjustment of Range	1		2	3
9. Adjustment of Height of Burst	1		1	2
10. Area Fire	1	1	2	4
11. Communications	2	1	5	8
12. Fire by Combined Observation	1	1	3	5
				40

APPENDIX F

ANNEX C: FORWARD OBSERVER PROCEDURES

Student will serve as a FO, performing field surveillance, target acquisition, calling for and adjustmrnt of fires.

1. INTRODUCTION

Hours: 1 (1C)
Objective: Student will list the duties and functions of a forward observer.
Ref: FM 6-40 Para 7-1 thru 7-3

2. MAP READING

Hours: 4 (½C, ½D, 3PE)
Objective: Student will determine distance using map scales; determine locations by using grid coordinates; determine altitude using contour intervals; define grid, true and magnetic azimuth and their relationship to each other.
Ref: FM 21-26 Para 9-16 thru 9-20

3. PREPARATORY OPERATIONS

Hours: 2 (1C, 1PE)
Objective: Student will relate preparatory operations to speed and accuracy of locating and reporting target information to the FDC.
Ref: FM 6-40 Para 7-4 thru 7-8

4. LOCATION OF TARGETS

Hours: 2 (½D, 1½PE)
Objective: Student will locate targets using the following methods: grid coordinates, polar plot, shift from a known point.
Ref: FM 6-40 Para 8-1 & 8-2

5. CALL FOR FIRE

Hours: 4 (1C, ½D, 2½PE)
Objective: Student will state the purpose list the content and sequence, and call fires.
Ref: FM 6-40 Para 9-1 thru 9-11

Annexes Continued

6. ADJUSTMENT PROCEDURES
   Hours: 3 (1C, 2PE)

   Objective: Student will adjust fire on a predetermined target.

   Ref: FM 6-40 Para 10-1 thru 10-5

7. DEVIATION ADJUSTMENT
   Hours: 2 (½C, 1½PE)

   Objective: Student will determine the lateral distance from burst center to OT line and announce the subsequent correction to bring fire on target.

   Ref: FM 6-40 Para 10-7 thru 10-9

8. ADJUSTMENT OF RANGE
   Hours: 3 (1C, 2PE)
   Objective:
   Ref:

9. ADJUSTMENT OF HEIGHT OF BURST
   Hours: 2 (1C, 1PE)
   Objective:
   Ref:

10. AREA FIRE
   Hours: 4 (1C, 1D, 2PE)
   Objective:
   Ref:

11. COMMUNICATIONS
   Hours: 8 (2C, 1D, 5PE)
   Objective:
   Ref:

12. FIRE BY COMBINED OBSERVATION
   Hours: 5 (1C, 1D, 3PE)
   Objective:
   Ref:

ANNEX TOTAL 40 Hr.

PLANNING MODEL

Training Program Based Upon FMS Cases

Team	Type	Function	Product
1	Integrated	Study existing situation, Evaluate in terms of buyer's desires, Develop total field needs to meet the requirements	TOE
2	Training	Analyze TOE in terms of tng required to field personnel qualified to perform all tasks. All training resources should be generally specified.	Curriculum Package
3	Logistics	a. Generate FMS Cases to support all resources requirements of the tng program - to include total housing requirements. b. Generate FMS Cases to support all needs to meet TOE requirements.	FMS CASE Package
4	Legal with Tng & Log Personnel	a. Develop Request for Proposal base TOE and Curriculum package. (Milestones & resources data must be clearly spelled out.) b. Distribute to prospective contractors. c. Develop program Evaluation concept. d. Develop TDA for OPM Staff e. Begin housing arrangements.	RFP, Eval Philosophy & TDA
5	Integrated	a. Receive Proposals and evaluate for the best product/cost combination, negotiate and finalize. b. Recommend contractor based on objective results. c. Award Contract (NTP)	Tng Contractor

Team	Type	Function	Product
6	Personnel	Procure qualified personnel for OPM Staff TDA.	Personnel Mobilization
7	OPM Staff	a. Monitor contractor activities in terms of evaluation concept spelled out in 4c above as he prepares to start training. b. Monitor instruction in terms of evaluation concept	Periodic Status Reports on effectiveness
8	OPM Staff	Measure fielded product in terms of initially stated objectives. Monitor contractor's review/ revision activities directed at improving weaknesses.	Effective Tng Package

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